Trouble

Proof

The MINES of ARIZONA

This department is under the direction of Mr. W. E. Defty, the well known mining engineer, who will carefully scrutinize all matters relating to mining in order that only reliable information re-garding legitimate enterprises shall find a place here.

The Republican would be pleas-ed to receive information from

any part of the state regarding the development of the mining in dustry. All communications should be addressed: Mining Department

sions will extend over the entire week completed it will be the most complete of September 18-23 and will be held in the principal mining centers of the state, the members traveling between the various points by special train and its equal will not be found between benver and San Francisco. The firm the various points by special train and automobile. Principles of mining and make all chemical determinate one of metallurgy of the greatest interest will whatever nature. They will sample be presented at the technical sessions. A special train has been arranged for to carry eastern members from New York on September 14. Other members and their guests will join the party at various points en route, and at El Paso, various points en route, and at El Paso, various points en route, and at El Paso, various members, starting from Los Anvening members, starting from Los Anvening members, starting from Los Anvening members, at a the train office will enable them to handle everything that Denver or San Franchised at the train are said will handle everything in this line of business. The ability and qualtition of 246,090 shares, with a par value of \$5. In 1915 the company's reserves.

Magma has an issued capitalization of 246,090 shares, with a par value of \$5. In 1915 the company produced \$5. In 1915 the company p and continue to Arizona. The princi-pal towns in which the institute ses- cisco is able to do. tions or visits of inspection will be held are Santa Rita and Hurley, N. M., and Douglas, Bisbee, Globe and Phoeand Flotation." The company plants that will be visited are as follows: At the Hurley, the mines and works of the Chino Copper Co.; at Bisbee and Douglas, the mines and works of Copper Queen Consolidated Mining Co., Calumet & Arizona Copper Co. and Shartuck Copper Co.; at the Globe district, mines and works of Inspiration Consolidated Copper Co. Migmi Copper Co. Consolidated Copper Co., Miami Copper Co., Old Dominion Copper Mining and Smelting Co., together with the new works of the International Smelting Co.

An elaborate entertal-ment program. is being planned by the Arizona com-mittee comprising Gerald F. G. Sherman, Arthur Notman, secretary, Nor-man Carmichael, W. G. McBride, John C. Greenway, W. L. Clark, B. Britton Gottsberger and Forest Rutherford.

Good Sense

Mining was discussed by A. A. Cole in his presidential address before the Canadian Mining Institute. He said: "Talk to the man on the street and you will be amazed in nine cases out of ten to find that he does not realize the

R. D. O. JOHNSON

Mining Engineer

Room 4, Lewis Bldg.

ASSAY OFEICE

307 North First Street

(Successor to J. S. Neall)

General assaying; determinations of the rarer metals; cyanide tests,

MINING PRODUCTS BOUGHT We are Smelters, Refiners and Buyers Arizona at Bisbee, the Consolidated Arizona at Humboldt, the Arizona of Gold and Silver Bullion, Amalgam, Concentrates, Cyanide Product, Batters Chips, Old Copper Plates and Platinum

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	Special	Prices	Tub	es
Size	Plain'	Treads	Grav	Red

Size	Special Prices	Tubes	
	Plain Treads	Gray	Red
28×3	\$ 6.55	\$1.75	\$1.95
30×3	6.95	1.85	2.10
30x31/2	8.95	2.10	2.35
31x31/2	9.45	2.15	2.40
32×31/2	9.95	2.25	2.45
34×31/2	10.95	2.30	2.55
36x31/2	12.05	2.40	2.75
30×4	13.20	2.80	3.10
31x4	13.85	2.85	3.20
32×4	14.05	2.95	3.30
33×4	14.70	3.10	3.40
34×4	14.95	3.15	3.50
35x4	15.65	3.20	3.60
36×4	15.85	3.30	3.70
34×41/2	20.25	3.85	4.30
35×41/2	20.85	3.95	4.35
36×41/2	21.25	4.10	4.50
37×41/2	21.90	4.15	4.60
35x5	23.65	4.70	5.20
36-E	22 05	4.00	= 05

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A

Prices Subject to Change Without

Automobile Tire Co. 5th & Olive Sts., Los Angeles, Cal. H. A. Demarest

The Oldest Automobile Tire Job-bing Concern in the United States the largest in the world.

Meeting of Institute Mining Engineers
In Arizona
For the first time in its history of forty-five years the American Institute of Mining Engineers

Meeting of Institute Mining Engineers
In Arizona
For the first time in its history of First street.

The The Same location, 205 and 307 North forty-five years the American Institute of Mining Engineers In Arizona the same location, 205 and 207 North For the first time in its history of forty-five years the American institute doubling their floor space and making of Mining Engineers will next month extensive alterations and additions, meet in the state of Arizona. The ses- which are now about toushed. When

Molybdenum is a white metal, mallenix, Arizona. The inspections will in-clude the Roosevelt Dam and the mines of filed with ease. However, it is seldom and works of practically all the leadand works of practically all the leading metal-producing companies of the state. At Douglas, in the technical sessions, the institute will discuss the special subject of "Smelting." At Bisbee papers will be read on "Mining and Geology" and at Globe the first day will be given over to "Mining and Smelting" and "Leaching." During a second day at Globe time has been set aside for what is regarded as an important discussion of "Concentration and Flotation." The company plants that will be visited are as follows: At

The acid used by the New Cornelia Copper Co, at Ajo for the leaching of oxidized copper ore will be furnished from the Calumet & Arizona smelter at Douglas, where it is a by-product of the reduction of sulphide copper ore. A large amount of lead was recently bought for lining the leaching-vats. Sulphuric acid of % strength will be used to leach the ore crushed to one-quarter-inch particles.

The Octave to Be Again Actively Operated According to J. Nelson Nevius in the Bulletin of the Chamber of Mines and Oil of Los Angeles, the Octave gold mine, ten miles east of Congress Junction, in the Walker district, will shortly be a producer again. Past yields to a depth of 2000 feet have been \$2,-000,000. After erecting an expensive electric power-plant at Wickenburg a twelve-mile transmission line, and a twelve-mile transmission line, and a complete motor equipment at the mine, the property was shut-down some years ago. The vein has recently been opened beyond the fault for 270 feet, averaging 27 inches wide and \$16.06 per ton. The shoot is poor for 25 feet, followed by 90 feet of \$13.44 ore across 4 feet. H. C. Gibbs of Boston is president of the company. ton is president of the company.

A Comparison

Arizona has a number of copper-mining companies, rivaling Michigan in that respect, and contrasting with the copper-mining industry in Mon-tant, Utah, Nevada, Alaska, and New Mexico, where one or two large com-panies account for the bulk of the out-put. Of large mines Arizona has a full put. Of large mines Arizona has a full share It is scarcely necessary to men-tion the Copper Queen and Calumet & Arizona at Bisbee, the Inspiration and Miami at Miami, the Ray Consolidated at Ray, the Old Dominion at Globe, the United Verde at Jerome, the Arizona Copper at Clifton, and the New Cor-nelia at Ajo. Among companies of more moderate size are the Shattuck-Commercial and Iron Cap at Globe, the Shannon at Metcalf, the Detroit Coper at Morenci, the Ray-Hercules at Ray, the Magma at Superior, the United Verde Extension at Jerome, and several others less well known. The Shattuck-Arizona Copper Co., which produced 11,154,211 pounds of copper in 1915, makes occasional shipmants of lead or The Magma Con-

of the United States in 1915, according to preliminary figures compiled by the U. S. Geological Survey, was approximately \$2,373,000,000, a gain of \$258,000,000, or more than 12% over 1914. The value for 1915 has been exceeded but once—in 1913—when a total of \$2,439,000,000 was recorded.

The metallic products reached the greatest value ever recorded, having advanced from \$691,000,000 in 1914 to \$987,500,000 in 1915—a gain of nearly

\$987,500,000 in 1915—a gain of nearly 43%. The metals contributing most largely to this increase, their combined gains being 91% of the total, are as

000, respectively. The final figures for the value of the non-metallic products in 1915 may be somewhat increased

over the preliminary figures given. The mining activities and output re-ported for the six months just ended show that 1916 promises to be a record-breaking year in the value of mineral

Example for Arizona Two fellowships of \$500 each, in metallurgical research have been established in the University of Idaho by the mining men of that state. This is an example to our friends in other mining regions

out, he will intail a mili comothing all of the most modern ideas, but he feels that as he is the only one concerned in the outcome, in this instance, he will take his own good time in providing equipment. — Our Mineral Wealth.

Report covering second quarter 1916, as follows: Development, feet, 16,217; cost of mining and coarse crushing, cents per ton, 80.85; ore treated, tone, 865.300; average content, per, cent, 1.631; cost

New Ore Body Has Been Opened Up Official announcement of important developments at the Magma property may be made shortly. We are reliably informed that a new ore body has been encountered which will add materially

produced 4,276,720 pounds of copper, and showed net profits of \$1,150,452, which is equal to the annual rate of

proximately 10,000,000 pounds, and in-dications are that earnings this year miles east of Douglas, near Nigger-will be between \$5.50 and \$6 per share. Magma is a high grade property, and a local attorney, staked out some

ead, 29; quicksilver, 75; silver, 12; tin, velopment of five claims there.

The "Petrified Forest" of Arizona really a series of petrified forests, lies a short distance south of Adamana, on the line of the Santa Fe railway. There are four "forests," included in a government reservation "Petrified Forest National Monument," created by presidential proclamation in 1906.

The name "forest" is by presidential proclamation in 1906 The name "forest" is not strictly appropriate, for the petrified tree trunks are all prostrate and are broken into sections. The logs are the remains of giant trees that grew in Triassic time, the age of reptiles. The trees were of several kinds, but most of them were related to the Norfolk Island pine, now used for indoor decoration. Doubtless they grew in a near-by region and a near-by region and after falling, drifted down a waterseveral kinds, but most of them were related to the Norfolk Island pine, now they grew in a near-by region and, after falling, drifted down a water-course and lodged in some eddy or a sand bank. Later they were buried by sand and clay finally to a depth of several thousand feet. The conversion to stone was effected by gradual re-placement of the woody material by silica in the form called chalcedony. deposited by underground water. A small amount of iron oxides deposited at the same time has given the brilliant and beautiful brown, yellow, and red tints which appear in much of the material.

Some of the tree trunks are six feet in diameter and more than 100 feet in length. In the first forest there is a fine trunk that forms a natural bridge over a small ravine, the water having first washed away the overlying clay and sand and then, following a crevice. worked out the channel underneath. The length of this log is 110 feet, and the diameter four feet at the butt and

one and a half feet at the top.

The petrified woods are beautiful objects for study. When thin slices are carefully ground down to a thickness of 0.063 inch or legs and placed under the microscope they show per-fectly the original wood structure, all the cells being distinct, though now they are replaced by chalcedony. By studying the sections F. H. Knowlton of the United States geological survey, department of the interior, has found that most of these araucarian trees which produced 14,154,211 pounds of copper in 1915, makes occasional shipments of lead ore. The Magma Copper Co. produced 6,946,459 pounds of copper last year from 59,219 tons of ore, which is well over 100 pounds per mains of some of its associates have to the control of the United States, where the remains of some of its associates have to the control of the United States, where the remains of some of its associates have to the control of the United States, where the remains of some of its associates have the control of the United States, where the remains of some of its associates have the control of the United States, where the remains of some of its associates have the control of the United States, where the remains of some of its associates have the control of the United States, where the remains of some of its associates have the control of the United States, where the remains of some of its associates have the control of the United States, where the remains of some of its associates have the control of the United States, where the remains of some of its associates have the control of the United States, where the remains of some of its associates have the control of the United States, where the remains of the United States, where the remains of the United States is the control of the United States and the control of the United States are the remains o also been found. These included other cone-bearing trees, tree ferns, cycads, United States Mineral Production
The value of the mineral production
of the United States in 1915, accordthat at that time, the rainfall was abundant.—U. S. Geological Survey.

T. B. Scott, who owns and is develgains being 91% of the total, are as follows: Pig iron, increase \$102,630,000, or 34%; copper, \$89,930,000, or 59%; and zinc, \$78,589,900, or 224%.

The value of the non-metallic products in 1915 has been exceeded in 1913 and 1914 only, showing in 1915 a decrease of less than 3% from the preceding year. The figures for 1914 and 1915 are \$1,423,000,000 and \$1,385,000,000 respectively. The final figures for 1914 by the has seen the result of many but he has seen the result of many considerable wealth, and the cost of constructing a mill would not entail obstacles worth considering, from the viewpoint of financing the undertaking, but he has seen the result of many oping with his own money the Pay Rail mine near Chloride, has adopted ing, but he has seen the result of many hasty decisions upon the part of others with good looking prospects, and has decided to take advantage of the ob-

More Chances for Arizona
Sage brush is one of those plentful products of nature for which it would be desirable to find industrial use; our readers will therefore be interested to find from products of nature for which it would be desirable to find industrial use; our readers will therefore be interested to know that a flotation-oil is being distilled from sage brush and that experiments made at the School of Mines at Reno, Nevada, indicate that it is twice as effective per volume as an equal quantity of pine-oil.

surprise that the owner does not build a mili and begin treating the high grade ore. Right there is where they differ in ideas of mine making with Mr. Scott. Scott believes that the mine should first be absolutely proven worthy of a mill, before investing \$25,-000 to \$50,000 in machinery and buildings. He has announced that he will continue development, and when he continue development, and when he has a sufficient body of ore blocked out, he will intall a mill combining

C. AND A. WILL OPEN **NEW SHAFT AT BISBEE**

vious term were 2,043,784 pounds, \$270,-201, 22 39c, and 9.13 cents. stones are cut into by shafts and crifts. It is very easy to miss a de-posit, and all the valley is not ore, it must be understood. The American-Saginaw lands are certainly very valuable and were bought cheaply, as were all the holdings

Trouble

PROGRESS ON NEW

Proof

DOUGLAS, Sept. 2.—There are indi-\$4.79 per share.

Recently, Magma's production has been pushed to the annual rate of ap
DOUGLAS, Sept. 2.—There are indications in the opinion of several local mining men that an important lead

ON TEXAS CLAIMS

Superintendent J. Pemberthy, of the Copper Belle mines, at Gleeson, accompanied by Master Mechanic Mart Effinger and Walter Cummings and a force of about twenty men have left the completion of the 220-foot concrete the concrete the

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THAT POSITIVELY OVERCOMES EVERYTHING EVER CONSIDERED A WEAKNESS OR A FAULT

The ITP Mine Carbide lamp requires no attention once it's charged and lighted. There are no wires which

must be jiggled, no screws which call for adjusting, nor valves of any kind which require regulating. The flame burns as steadily as a jet of city gas, and requires no more attention than does an electric bulb used to light your home or your office. There is never any flickering or ever a flare, the flame

Agitating or jarring will not affect the size of the flame; even a tumble will not cause sudden increase in pressure or resultant increase in the size of the flame. This is the lamp which will meet your requirement perfectly. We are State Distributors of this lamp and are in position to name you very attractive

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remaining the same size until the last atom of carbide is used up.

prices. We can furnish you carbide in any quantity.

ago from the Baron estate.—Tucson Prospector.

Republican want ads pay

magin is a high grade property, and in the 1915 year the average cost of producing coppor was only 6.52c per pound. The company has been low in our reserves, however. At the close of 1915, the official estimate of ore reserves was 90.000 tons. The announcement expected in a few days will, therefore, be particularly gratifying to stockholders.

**Copper maintains a high price=2" cents. The other metals have gained strength during the eweek. So much copper its sold far ahead, with probable large sales in the near future that its resistance to a decline is explainable. From the highest point during the current years to the present quotations, following are the present quotations of the 1915 year the average cost of producing coppor was only 6.52c per pound. The company has been low in or reserves, however. At the close of 1915, the official estimate of ore reserves was 90.000 tons. The announcement expected in a few days will, therefore, be particularly gratifying to stockholders.

Output Department

**O

publican office. A Want Ad will see more customers than you can.

FEDERAL MINE DEVELOPMENT CO.

HERBERT B. ATHA, President.

This company has been formed to take over and develop good mining prospects, not to sell stock, and would be pleased to have any worthy properties called to its attention.

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OU CAN'T MISS IT

any more than we can if you buy stock now in the famous Glory Hole Bonanza Mines Company, while you can get it at 19c a share, full paid and non-assessable, BEFORE WE MAKE THE BIG STRIKE OF HIGH GRADE BONANZA GOLD ORE, which famous engineers say we will certainly make. Some of the best mining men in the world have examined the Glory Hole and say we have the making of a big rich bonanza mine there and that it is not going to take much more work to put us into a high grade Bonanza ore body.

We Are Going to Get the Gold

and that we are starting in the right place and the right way; that we have one of those famous but rare examples of saddle reef or anticinal enrichments like the world famous Bendigo mines in Australia, which have produced over \$300,000,000 in gold, or the Mount Morgan mine which has paid \$5,000,000 a Year in dividends or the famous Tombstone mines, which are not gold but have nevertheless produced millions. Some of you may remember how Consolidated Virgin la stock went from 17c a share to over \$600 a share when they struck their Bonanza Ore Body. Many of you undoubtedly remember when I brought the first High Grade \$100 a pound gold ore into Phoenix and how the mine was closed down almost as soon as

Everything has now been settled, the Glory Hole Bonanza Mines Co. has been organized and has bought and PAID FOR IN FULL the famous Glory Hole property and we are now working at the mine, ON THE ORE TRAIL. Engineers say that we are on the right track and that we will certainly get the gold and open up bodies of high grade bonanza ore; that the Glory Hole is not a freak as some of you who have never seen it may imagine, but A WHALE OF A MINE Now in the making.

You can buy the stock today at 10c a shore, full paid and non-assessable, for a short time only, as the price will be raised very soon now whether we get the high grade or not. You can imagine what this stock will be worth when we hit the high grade. \$50 will buy 500 shares TODAY; \$100 will buy 1000 shares; \$250 will buy 2500 shares and \$500 will buy 5000 shares, ONE THOUSAND SHARES, COSTING YOU ONLY \$100 TODAY, WILL BE WORTH \$100,000 IF WE HIT THE HIGH GRADE ORE AGAIN IN BIG BODIES AND THE PRICE GOES TO \$100 A SHARE AS IT MAY EASILY DO YOU CAN'T LOSE MUCH AND YOU MAY MAKE A FORTUNE QUICK, Engineers say the gold is there. If it is we are going to get it.



GETTING CLOSER TO IT EVERY DAY